

BOARD OF COUNTY COMMISSIONERS

AGENDA ITEM SUMMARY

Meeting Date: February 19, 2003

Division: BOCC

Bulk Item: Yes ☐ No ☒

Department: District 5

AGENDA ITEM WORDING:

Approval for a request for qualifications for implementing the EPA Grant of 3.8 million dollars for a demonstration project on one of the Florida Keys in an efficient and affordable manner.

ITEM BACKGROUND:

EPA, Monroe County, and the State of Florida have acknowledged serious degradation of ocean ecosystems, including grasses and coral reefs in the Florida Keys. A demonstration on one of the Keys will be an important initial effort to pull the advanced technologies and management together in an innovative approach, and will serve as a model for the remaining Keys. Responders will be asked to meet the Monroe County target price of \$35.00 per month, and a \$2,700 connection fee using the \$3.8 million EPA grant money and the local match of \$1,344,000 for a total of \$5.07 million dollars.

PREVIOUS RELEVANT BOCC ACTION:

CONTRACT/AGREEMENT CHANGES:

STAFF RECOMMENDATIONS:

TOTAL COST: _____

BUDGETED: Yes ☐ No ☐

COST TO COUNTY: _____

SOURCE OF FUNDS: EPA

REVENUE PRODUCING: Yes ☐ No ☐ **AMOUNT PER MONTH** _____ **Year** _____

APPROVED BY: County Atty _____ OMB/Purchasing _____ Risk Management _____

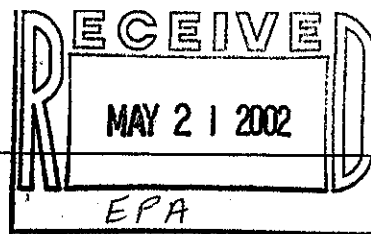
DIVISION DIRECTOR APPROVAL:


MAYOR PRO TEM MURRAY NELSON

DOCUMENTATION: Included ☒ To Follow _____ Not Required _____

DISPOSITION: _____

AGENDA ITEM # 15



Murray Nelson

From: <Freeman.Bob@epamail.epa.gov>
To: "Commissioner Murray Nelson"
Sent: Tuesday, May 21, 2002 1:53 PM
Subject: EPA Decentralized Demo Grant

This email is to confirm the discussion we had on the telephone today regarding the criteria necessary for the Decentralized System Demo Grant to be offered to Monroe County by EPA.

As we have discussed previously, there are four basic principles that any project(s) funded under this Demo Grant must comply with, as follows:

- The funds must be used to cover as much as 75% of the costs of design, construction, monitoring, O&M and administering decentralized/onsite systems. Costs associated with operating the onsite technology test facility on Big Pine Key could also be included in the demo project.
- These funds must be used in areas where the decentralized systems are seen to be a "permanent" solution, i.e. where those systems will not be replaced during the life of that system (roughly 15 years)
- The establishment of a centralized administrative entity with responsibility for construction, oversight, ongoing maintenance, and financial administration (billing) for these systems is an essential part of any project.
- Any project funded should be consistent with the Sanitary Wastewater Master Plan accepted by the County.

As we discussed, the grant could be made with a phased approach on the scope of work, with the first phase consisting of the evaluation of alternative possible projects or project areas -- the completion of that phase would result in a detailed plan of work with specific project(s) in specific areas. This evaluation/scope development would be prepared by a consultant who has demonstrated experience and capability in dealing with onsite and decentralized wastewater treatment alternatives and who has demonstrated experience in FL Keys projects. This work would be eligible for EPA participation under the Demo Grant at the 75% max grant percentage. The grant would contain grant conditions requiring the implementation of the developed scope of work within a specific period of time.

✓ If projects desired to be evaluated are not consistent with the existing Master Plan, the Phase 1 scope should include re-examination of the portion of the plan pertaining to the project(s) in question to determine if the Plan recommendations should be sustained or amended. If an amendment to the Plan is justified, the Phase 1 deliverables should include the amendment to the Plan along with the specific scope of work for the project(s).

The goal of this Demo Grant is to further the concept of centralized

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management of decentralized wastewater treatment technology by "real life" demonstrations projects. Close coordination with EPA throughout the grant process and performance of the work will help insure that the Agency goal is achieved through successful projects, as well as provide Monroe County with a demonstration of decentralized treatment technology that may provide an incentive for greater application of those concepts in the future.

If you have any questions please contact me. I look forward to working with the County to utilize these grant funds in an expeditious and effective manner.

Bob Freeman, P.E.
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EPA - Region 4
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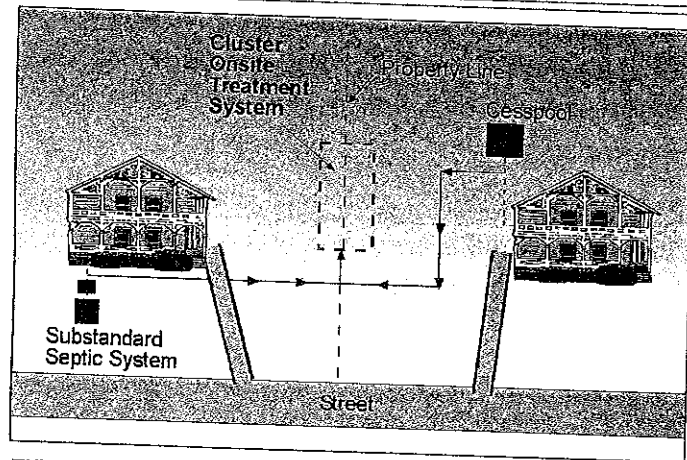


EXHIBIT 3-16
Shared cluster systems are two or more homes connected to an Onsite Wastewater Nutrient Reduction System (OWNRS).

Plan. These costs are presented in Exhibit 3-15 and are based on several assumptions that are described in Technical Memorandum No. 7, in Volume 4, *Supporting Documents*, of this Master Plan. Annual costs were based on a 20-year period at a 6-percent interest rate. The capital and O&M costs were combined to obtain a uniform annual cost to compare alternatives more easily. A unit cost, expressed in dollars per thousand gallons (\$/1000 gallon) of treated wastewater capacity, is also provided in Exhibit 3-15, and was obtained by dividing the uniform annual cost by the annual wastewater volume, and is based on a 500-gallon per day (gpd) flow.

It should be noted that it may be misleading to evaluate installation costs of the OWNRS on a "cost per gallon of treatment" basis. This is because the treatment capacity of most commercially available

OWNRS treatment units is 500 gpd, and they are capable of handling the flow from several EDUs (equivalent dwelling units). Therefore, if serving only one home, the annual cost per EDU will be significantly higher than if a utility operated an OWNRS that served multiple homes, where the costs would be distributed over more than one customer.

3.3.5 Cluster System Alternatives

An OWNRS that serves multiple homes is commonly referred to as a clustered OWNRS, or cluster system. Several cluster system alternatives

were evaluated for use in the Keys, ranging in size from two homes sharing one treatment system, to a centralized system where more than 100 homes were connected to an OWNRS-type treatment facility via low pressure sewers.

Four large cluster systems were evaluated as an alternative to centralized sewers for areas that were somewhat more distant from the main population centers. These cluster areas were located on Upper

Sugarloaf Key, Big Pine Key, Conch Key, and North Key Largo, and ranged in size from 41 to 102 homes. Details of these cluster system analyses can be found in Technical Memorandum No. 12 in Volume 5, *Supporting Documents*, of this Master Plan.

In addition to the four larger cluster systems, two types of smaller cluster systems that serve two to ten homes were also evaluated. "Shared" cluster systems refer to small clusters where the wastewater treatment unit is shared between homeowners, but is placed on one or more of the existing properties, such that relatively short runs of re-routed gravity building sewers could be used to connect to the treatment system. Exhibits 3-16 and 3-17 illustrate this concept.

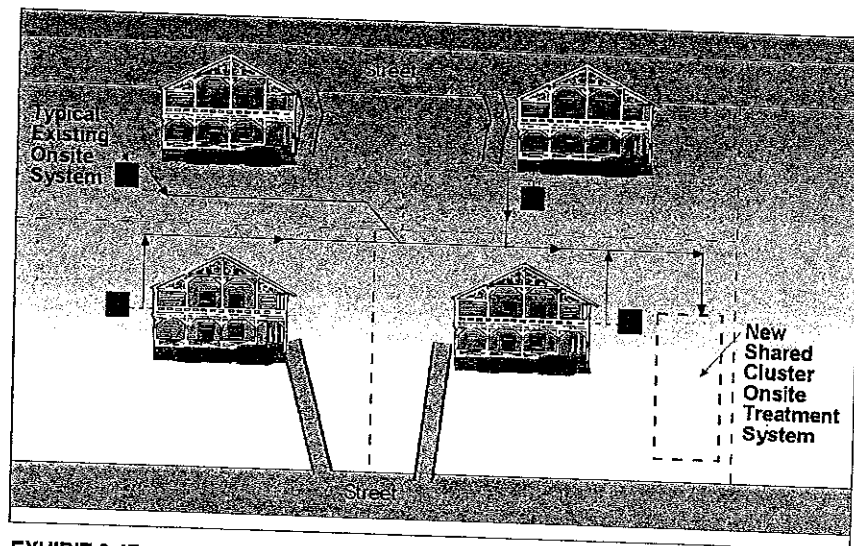


EXHIBIT 3-17
Up to four homes can be connected to a shared cluster system.

ADF from the five homes is 660 gpd. A low-pressure collection system and a 900-gpd OWNRS was assumed adequate to serve this five-home cluster system; the treatment system would be located on a separate lot.

Ten-Home Sewered Cluster System—Blue Lagoon Street, Port Pine Heights: The estimated ADF from the ten homes is 1,320 gpd. A low-pressure collection system and a 2,000-gpd OWNRS was assumed adequate to serve this ten-home cluster system; the treatment system would be located on a separate lot.

3.3.6 Costs of Cluster Systems

Based on an analysis of the performance of the cluster systems in these areas, capital and O&M costs were developed for each cluster system. The details of this analysis can be found in Technical Memorandum No. 12 in Volume 5, *Supporting Documents*, of this Master Plan.

Total annual costs for the sewered cluster systems ranged from \$2,100 to \$3,900 per EDU, with the smaller "sewered" cluster systems (3 to 10 homes) being the most expensive, at \$2,400 to \$3,900 per EDU. These smaller "sewered" cluster systems can be more expensive than individual OWNRS for two reasons: 1) the cost of land acquisition for the wastewater treatment system, and 2) the cost of the pressure sewer system.

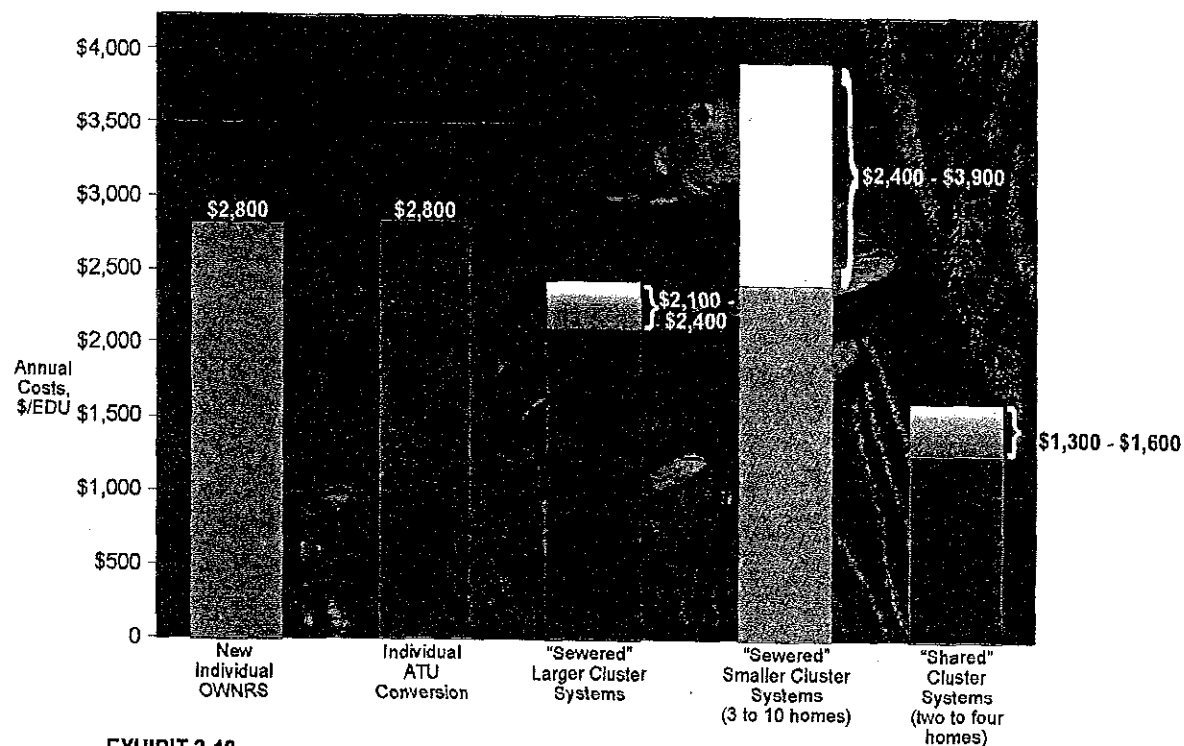


EXHIBIT 3-19

Comparison of Annual Costs of Individual OWNRS vs. Cluster OWNRS Systems

Although the larger "sewered" cluster systems are less expensive than the smaller "sewered" cluster systems, they are more costly than the community collection and treatment plant alternative (which is evaluated in Chapter 5 of this Master Plan).

The total annual costs for the shared cluster systems ranged from \$1,300 to \$1,600 per EDU, and were considerably less costly than locating individual OWNRS at each home. Under certain circumstances, shared cluster systems may

be less costly than the community wastewater collection and treatment plant alternatives, and should be considered in service areas where wastewater collection/treatment plant annual costs exceed approximately \$1,300 per EDU. (See Chapter 5 of this Master Plan.)

3.3.7 Summary of Onsite Wastewater Treatment System Alternatives Costs

The summary of total annual costs per EDU presented in Exhibit 3-19 shows that shared cluster systems for two to four homes are the most economical